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K&L Gates LLP P.O. BOX 1135 CHICAGO, IL 60690				
EXAMINER				
KARACSONYI, ROBERT				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/543,008

Applicant(s)

HUBER ET AL.

Examiner

ROBERT KARACSONY

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-17 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-17 and 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The following Office Action is in response to the Amendments received March 08, 2010. Claims 12-17 and 19-22 are currently pending.

Claim Objections

2. Claims 1 and 19-21 are objected to because of the following informalities:
3. In line 5, claim 1, please replace "said transmitters" with --said plurality of parasitic transmitters-- to comply with antecedent basis rules.
4. In line 8, claim 1, please replace "a high-frequency interface" with --said high-frequency interface-- to comply with proper antecedent basis rules.
5. In lines 8-9, claim 1, please replace "the parasitic transmitters" with --said plurality of parasitic transmitters-- to comply with antecedent basis rules.
6. In line 10, claim 1, please replace "the parasitic transmitters" with --said plurality of parasitic transmitters-- to comply with antecedent basis rules.
7. In lines 12, claim 1, please replace "the structures" with --structures-- to comply with antecedent basis rules.
8. In line 2, claims 19 and 20, please replace "one parasitic transmitter" with --said single one of said plurality of parasitic transmitters-- to comply with antecedent basis rules.
9. In line 2, claim 21, please replace "the parasitic transmitters" with --said plurality of parasitic transmitters-- to comply with antecedent basis rules.
10. Appropriate correction is required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States,

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 12, 13, 16 and 19-22 are rejected under 35 U.S.C. 102(c) as being anticipated by *Nagumo* (US 6,657,593, hereinafter *Nagumo*).

Claim 12: *Nagumo* teaches a multiband antenna array for a mobile radio equipment, comprising:

a planar patch antenna (3, fig. 5) defining a plane and having a plurality of resonances and is further coupled to a ground connection and to a high-frequency interface (10, fig. 5); and

a plurality of parasitic transmitters (4a and 4b, fig. 5), wherein said transmitters are located marginal to the planar patch antenna, outside of the planar patch antenna, and in the plane defined by the planar patch antenna, each of the plurality of parasitic transmitters being embodied so as to be free of a high-frequency interface, wherein the parasitic transmitters are arranged as line-type conductor structures (the Examiner notes that the limitation “line-type” is broad enough to encompass parasitic elements 4a and 4b, see fig. 5), wherein a single one (4a) of the parasitic transmitters extends in at least two different dimensions in the plane to at least

partially extend over two adjacent sides of the planar patch antenna (fig. 5), whereas structures of the planar patch antenna are arranged as sheet-type conductor structures.

Claim 13: *Nagumo* teaches at least one parasitic transmitter (4a) is provided with a connection to ground (fig. 5).

Claim 16: *Nagumo* teaches the plurality of parasitic transmitters are arranged on opposite sides of the planar patch antenna (fig. 5).

Claims 19-20: *Nagumo* teaches one parasitic transmitter (4a) extends at least partially over three adjacent or four sides of the planar patch antenna (fig. 5).

Claim 21: *Nagumo* teaches the planar patch antenna and the parasitic transmitters are arranged in a same plane (fig. 5).

Claim 22: *Nagumo* teaches at least one parasitic transmitter has a spatial extension (6a), emerging perpendicularly out of the plane defined by the planar patch antenna (fig. 5).

13. Claims 12-14, 16, 19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by *Poilasne et al.* (US 6,323,810, hereinafter *Poilasne*).

Claim 12: *Poilasne* teaches a multiband antenna array for a mobile radio equipment, comprising:

a planar patch antenna (10, fig. 4) defining a plane and having a plurality of resonances and is further coupled to a ground connection (22, fig. 4) and to a high-frequency interface (20, fig. 4); and

a plurality of parasitic transmitters (319, fig. 8), wherein said transmitters are located marginal to the planar patch antenna, outside of the planar patch antenna, and in the plane defined by the planar patch antenna, each of the plurality of parasitic transmitters being

embodied so as to be free of a high-frequency interface, wherein the parasitic transmitters are arranged as line-type conductor structures (the Examiner notes that the limitation “line-type” is broad enough to encompass parasitic elements 319, see fig. 8), wherein a single one (any one of 319, fig. 8) of the parasitic transmitters extends in at least two different dimensions in the plane to at least partially extend over two adjacent sides of the planar patch antenna (fig. 8), whereas structures of the planar patch antenna are arranged as sheet-type conductor structures.

Claim 13: *Poilasne* teaches at least one parasitic transmitter is provided with a connection to ground (col. 4, lines 34-39).

Claim 14: *Poilasne* teaches the plurality of parasitic transmitters are provided with a shared connection to ground (fig. 7).

Claim 16: *Poilasne* teaches the plurality of parasitic transmitters are arranged on opposite sides of the planar patch antenna (fig. 8).

Claim 19: *Poilasne* teaches one parasitic transmitter extends at least partially over three adjacent sides of the planar patch antenna (fig. 8).

Claim 21: *Poilasne* teaches the planar patch antenna and the parasitic transmitters are arranged in a same plane (fig. 8).

Claim 22: *Poilasne* teaches at least one parasitic transmitter has a spatial extension, emerging perpendicularly out of the plane defined by the planar patch antenna (fig. 7).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Nagumo*.

16. Claim 14: *Nagumo* teaches all of the limitations of claim 12, as discussed above.

Nagumo fails to teach the plurality of parasitic transmitters are provided with a shared connection to ground. However, it was well known to the skilled artisan at the time of the invention to use a shared ground connection as it would have reduced the complexity of the circuit layout, as well as reduced the amount of materials needed thus reducing costs. Secondly, since sharing a ground connection or using two separate ground connection would have yielded the same results, it would have been a matter of design choice. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the grounding of the parasitic radiators of *Nagumo* with a shared ground connection in order to have reduced the complexity of the circuit layout, as well as reduce material thus reducing costs and since it was a matter of design choice.

17. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nagumo* in view of *Tan* (US 6,680,705, hereinafter *Tan*).

Claim 15: *Nagumo* teaches all of the limitations of claim 12, as discussed above, however, fails to teach at least one parasitic transmitter is free of connections to ground. It is well known to the skilled artisan at the time of the invention that parasitic radiators may be grounded or not grounded. *Tan* teaches the use of non-grounded parasitic radiators (fig. 8). The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the

invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have not grounded the parasitic radiators of *Nagumo* since the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claim 17: *Nagumo* teaches the plurality of parasitic transmitters are located on adjacent sides of the planar patch antenna (since each of the parasitic radiators 4a and 4b extend over two adjacent sides of the planar patch antenna, the Examiner interprets it as "the plurality of parasitic transmitters are located on adjacent sides of the planar patch antenna," see fig. 5).

Response to Arguments

18. Applicant's arguments filed March 08, 2010 have been fully considered but they are not persuasive.

19. Regarding the arguments in paragraph 3 of the Remarks, the Examiner respectfully disagrees. Parasitic radiator 4a of *Nagumo* does in fact extend in two different dimensions in the plane to at least partially extend over two adjacent sides of the planar patch antenna. Parasitic radiator 4a is a width dimension and a length dimension which the Examiner interprets as two different dimensions. To put it another way, parasitic radiator 4a extends laterally as well as longitudinally.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT KARACSONY whose telephone number is (571)270-1268. The examiner can normally be reached on M-F 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./
Examiner, Art Unit 2821

/Hoang V Nguyen/
Primary Examiner, Art Unit 2821